OFF-PLANT OU SUPPLEMENTAL FLOURIDE MONITORING AND ECOLOGICAL RISK ASSESSMENT

Supplemental Fluoride Monitoring and Ecological Risk Assessment
EMF Off-Plant Operable Unit[1]
June 2020

The Ecological Risk Assessment (Ecology and Environment, 1995) completed as part of the Remedial Investigation of the Eastern Michaud Flats Superfund Site found some ecological risk to individual receptors in the Off-Plant Operable Unit. However, since widespread or significant ecological impacts at the community or population level were not expected, the level of risk was determined to be within the EPA's CERCLA acceptable risk range. Air emissions from the Simplot Don Plant were identified as the only source for fluoride deposited on vegetation consumed by grazing mammals.

Given the ongoing air emissions and the potential for cumulative toxicity of fluoride, the 1998 ROD included a Remedial Action Objective to prevent the potential for future impacts to ecological receptors by monitoring fluoride at the Site. The remedy called for additional monitoring followed by an evaluation of risks and, if necessary, identification of source controls or other actions. If excess risks were generated by an ongoing source, the EPA was to work with the State and Tribes to identify the appropriate source controls. While specific controls were not defined in the ROD, the document did state that permitted sources were to be addressed outside of CERCLA.

In 2008, the EPA met with Simplot and FMC (the Companies), Idaho DEQ and the Shoshone-Bannock Tribes (Tribes) (the technical team) to determine a path forward for the fluoride monitoring and evaluation described in the 1998 ROD. A data gap analysis was conducted, identifying the outstanding uncertainties and the concern of all members of the technical team. The spreadsheet prepared during this analysis served as a workplan for the project. A copy can be found in the EPA's Site File.

Also, in 2008, the EPA met with the Tribes to identify areas where items of ecological or cultural significance may have been adversely impacted by deposition of fluoride contained in Simplot's emissions. Based on the Tribes' request, the EPA conducted additional soil and vegetation sampling in the Bottoms Area.

All draft work products were reviewed by, and discussed with, the technical team. At several points, identified concerns resulted in additional evaluation by the Companies and/or Booze Allen Hamilton (BAH), the EPA's contractor. In most cases, written responses were prepared for all comments submitted.

The following summarizes the supplemental investigations of fluoride and assessments of ecological risks in the Off-Plant OU performed since the Remedial Investigation and the key findings. All documents cited have undergone previous review by the technical team and may be found in the EPA's Site File.

Fluoride Summary Report

In August 2008, the Companies summarized the historical data and analyses related to fluoride in vegetation and soils on or near the Off-Plant OU.[2] Based on their review, the Companies found:

- There is sufficient data to limit the area of potential concern to areas immediately downwind of the Simplot Don Plant. Elevated fluoride levels were not observed beyond a three-mile radius of the Site.

[1]Jeremy Jennings, Remedial Project Manger, Superfund and Emergency Management Program, EPA Region 10. Seattle, WA. June 2020.

[2] NewFields, 2008. *Fluoride Summary, Off-Plant Area, Eastern Michaud Flats Superfund Site*. Prepared for J.R. Simplot Company. August.

- Fluoride concentrations in vegetation and soils rapidly decrease with distance from the Simplot plant.
- There are no discernable trends in data collected between 1997 and 2004.
- Ongoing air emissions from the Simplot are the principle source of fluoride.
- Fluoride enters the leaf tissue by diffusion through the leaf stomata and absorption through roots. Due to the high pH and calcium levels in local soils, fluoride has a low mobility in soils and thus, soil pore concentrations and root uptake rates are low.
- Fluoride concentrations in vegetation decrease with increased plant biomass/growth. Thus, concentrations fluctuate during the growing season in response to weather, irrigation cycles, and fertilization.
- Due to the seasonal growth patterns of the grazed vegetation, fluoride levels in forage do not accumulate from year to year.

Based on these findings, the Companies concluded that fluoride had been extensively characterized, including identification of sources, the spatial extent of elevated fluoride levels in soils and vegetation, dispersion and deposition patterns and potential risks. Furthermore, they concluded that fluoride levels in the Off-Plant OU presented marginal ecological risks at levels below the EPA's thresholds for CERCLA action so no further action was required under CERCLA.

While the EPA generally concurred with the Companies' findings, concerns regarding the adequacy of previous assessments were raised, citing revisions to the EPA's ecological risk assessment guidance and potential changes to toxicological variables. The state and Tribes also raised concerns. In response, the Companies and the EPA, with concurrence of the state and Tribes, agreed to implement a phased work plan for additional sampling and assessment of ecological risks in the Off-Plant OU.

Sampling of Fluoride in the Off-Plant OU

Prior to conducting further sampling or assessment, the Companies used the data collected since the RI and the EPA's revised methodology to run a preliminary risk assessment.[3] The results were used to help identify locations and media where additional sampling may be warranted. A Sampling and Analysis Plan that included a Quality Assurance Program Plan was developed by the Companies and approved by the EPA.[4] Supplemental sampling, completed in 2009, focused on the areas shown to have the highest fluoride levels during the RI. Media sampled included soil, vegetation, invertebrates and small mammals.

Concurrent with the above, the Companies and the EPA's contractors conducted literature reviews to identify potential toxicological effects and endpoints of fluoride on honey bees, bison and other potential ecological receptors.[5] Based on the reviews, the EPA concluded that effects on bison would be like those experienced by cattle (cattle were included in the assessment) and further assessment of potential effects to honey bees and other receptors was not warranted.

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[3] NewFields, 2008. *Draft Reassessment of Ecological Risk from Fluoride – Phase I*. Prepared for J.R. Simplot Company.

[4] NewFields, 2009. *Sampling and Analysis Plan for Reassessment of Ecological Risk from Fluoride. Off-Plant Operable Unit, Eastern Michaud Flats Superfund Site*. Prepared for J.R. Simplot Company, FMC Corporation. September.

[5] NewFields, 2006. EMF Superfund Site, *Summary Review of Potential Effects of Fluoride on Bees*. Prepared for J.R. Simplot Company. August.

NewFields.,2006. *EMF Superfund Site, Summary Review of Potential Effects of Fluoride on Bison.* Prepared for J.R. Simplot Company. August.

BAH, 2008. *Draft Potential Risks to Honey Bees from Fluoride Exposure at the EMF Site.* Prepared for US Environmental Protection Agency as Appendix A, Response to Comments. Region 10, Seattle, WA. Booz Allen Hamilton. May 6.

BAH, 2008. *Draft Potential Risks to Bison from Fluoride Exposure Related to the EMF Site.* Prepared for US Environmental Protection Agency as Appendix B, Response to Comments. Region 10, Seattle, WA. Booz Allen Hamilton. May 6.

Ecological Risk Reassessment

A *Reassessment of Ecological Risk from Fluoride for the Off-Plant OU – Phase IV* [6] was finalized in June 2010. Ecological receptors considered included coyote, deer mice, horned owl, red-tailed hawks and cattle. Potential risks were calculated using both the NOAEL (no adverse effect level) TRV (toxicity reference value) and the LOAEL (lowest observed adverse effect level). Approximately 10% of the hazard quotients (HQ) calculated for individual receptors using the NOAEL were found to exceed the EPA's risk threshold (HQ=1). The highest values reported were 4.7 and 4.4 with most being less than 2. However, using the LOAEL, the only risks that exceeded that threshold were the horned lark (HQ=1.1) and the coyote (HQ=1.7) in an exposure unit (EU) adjacent to the Don Plant. The EPA's independent reevaluation of the ecological risk reassessment provided similar results.

The EPA's *Ecological Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (1997) recommends that ecological risks be assessed at the community and population level, not the individual level, and that Superfund actions are only warranted when those risks are significant and widespread. Consistent with the guidance, the Companies used the LOAEL to assess the need for further action. They concluded that, since both the horned lark and the coyote (the two receptors with a LOAEL HQ>1) forage over areas much larger than the area impacted by Simplot's emissions, significant risks at a community or population level were not expected. Thus, even though fluoride may present risk to individual receptors, no further actions were required under CERCLA. The EPA did not concur or non-concur with the Companies' conclusions.

The Companies provided a draft risk reassessment report to the technical team for review in January 2010. The EPA comments pointed out that the incorporation of bioavailability factors may have been inappropriate for mammals and requested the risks be reassessed using alternative TRV and bioavailability factors. The EPA also requested BAH to independently quantify ecological risks to birds and mammals using alternative TRVs and bioavailability factors. Major differences between the two analyses were discussed, leading to an agreement on the set of values used for the risk calculations. A technical memorandum containing the BAH analysis is included as Appendix A of the *Final Technical Memorandum: Proposed Action Level and Monitoring for Fluoride For the Off-Plant Operable Unit*.[7]

Evaluation of Fluoride Toxicosis Risks to Grazing Animals Using Soil and Forage Thresholds

The Tribes requested that livestock and bison be included in the risk re-assessment due to the economic importance of grazing livestock and their sensitivity to fluoride. Laboratory-derived TRVs for fluoride exposure of large grazing mammals were not available. Consequently, the re-evaluation used thresholds for the effect of dental fluorosis in cattle based on fluoride concentrations in vegetation and soil as effect benchmarks to assess risks to large grazing mammals.[8] The literature recognizes dental fluorosis as the most sensitive endpoint of concern for exposure of livestock to dietary sources of fluoride, and cattle are recognized as the most sensitive grazer to the effects of fluoride. Thus, the degree of dental fluorosis was used as an early indicator potential

[6] Formation Environmental, 2010. *Reassessment of Ecological Risk from Fluoride – Phase IV. Final. Off-Plant Operable Unit*. Eastern Michaud Flats Superfund Site. June.

[7] BAH, 2013. *Final Technical Memorandum. Proposed Action Level and Monitoring for Fluoride for the Off-Plant Operable Unit, Eastern Michaud Flats Superfund Site, Pocatello, Idaho*. Prepared for U.S. Environmental Protection Agency Region 10, under RCRA Enforcement, Permitting, and Assistance (REPA) Contract. REPA5 Work Assignment R0101, REPA5-0101-002. March 8. Appendices include: *Risk Calculations for Fluoride Toxicosis at the Off-Plant Operable Unit, Eastern Michaud Flats Superfund Site, using Sampling Data from 2009*; *Ecological Risk-Based Threshold Concentrations for Fluoride, Eastern Michaud Flats Superfund Site, Off-Plant Operable Unit; Summary of Historical and Recent Monitoring Data for Fluoride in Vegetation at Off-Plant Areas;* and *Maps of Past Fluoride Data Collection Locations*

[8] Dental fluorosis is a change in the tooth enamel caused by ingestion of excessive fluoride during enamel formation. It appears as a range of visual changes in enamel causing degrees of intrinsic tooth discoloration, and, in some cases, physical damage to the teeth. The severity of the condition is dependent on the dose, duration, and age of the individual during the exposure.

adverse health effects from fluoride exposure. The literature also suggests that cattle may serve as a surrogate for bison and large wildlife grazers important to the Tribes. The evaluation is documented in Appendix A of the 2013 *Final Technical Memorandum*.

The fluoride thresholds were translated into a no-observed effect concentration (NOEC), low-observed effect concentration and effect concentrations (ECs) for moderate and severe effects and compared to the 2009 vegetation data. The results indicated that, at some exposure units, risks to grazing mammals from fluorosis exceeded the EPA's risk threshold of HQ=1 at all ECs. A similar evaluation using soil thresholds indicated that, using a high ingestion rate and bioavailability, the LOAEC-HQs exceeded 1.0 at several exposure units. The greatest potential risks were identified at exposure units closest to the Simplot facilities. This evaluation indicated that fluoride concentrations in environmental media at the Off-Plant OU would likely present risks to livestock that exceed the risk threshold, HQ=1.

Comparison of Fluoride Levels in Vegetation to Idaho's Fluoride in Forage Standards

Independent of federal air regulations, the State of Idaho has promulgated Fluoride in Forage Standards (IDAPA 58.01.01) to prevent fluorosis in grazing animals, mainly cattle. The regulation specifies that the total fluoride content in vegetation used for feed and forage should not exceed 40 ppm (parts per million) annually, 60 ppm for any two consecutive months or 80 ppm in any one month. Due to the presence of fluoride in Simplot's current air emissions and the potential use of vegetation grown downwind of the facility for feed and forage, Simplot's air permit includes provisions implementing this requirement. Requirements include monitoring of forage in the area where fluoride from the air emission is deposited on vegetation used as feed for cattle.

While permitted releases are beyond the scope of CERCLA and compliance with terms and conditions of Simplot's air permit is the responsibility of DEQ, the Companies agreed to compare historical forage data to the 80 ppm monthly and 40 ppm annual endpoints in Idaho's standards and include the information in the *Fluoride Summary Report*. Concentrations above the annual, bi-monthly and monthly end points were frequently reported at several sampling locations. While the geographical extent of elevated fluoride remained consistent, no seasonal or annual patterns were found in the data.

Independently, BAH compared the 2009 data to the same endpoints and found the 2009 concentration exceeded 40 ppm at three exposure units and 80 ppm endpoint at one exposure unit. As with the Companies findings, these results indicated that there were areas of the Off-Plant OU where levels of fluoride on vegetation was presenting risks to ecological receptors. The results are presented in the 2013 *Final Technical Memorandum*.

Risk-Based Concentration Thresholds for Ecological Receptors

The EPA does not have a set of risk-based concentrations (RBCs) that correspond to thresholds of acceptable risk in environmental media for ecological receptors. However, using the methodology used in the *Final Phase IV Reassessment of Ecological Risks from Fluoride*, the EPA developed a set of RBCs for receptors of concern at the Off-Plant OU. The RBC's developed were sets of risk thresholds equivalent to a total HQ=1 for the combined exposure pathways for each ecological receptor. As such, fluoride at or below the identified concentrations would be protective of wildlife that reside or feed at the Off-Plant OU.

The lowest NOAEL and LOAEL RBC calculated for forage were 14 ppm (equivalent to mg/kg dry weight) and 65 ppm, respectively. Idaho's equivalent endpoint is 40 ppm. For soil, the lowest NOAEL RBC was 149 ppm while the lowest LOAEL was 685 ppm. For comparison purposes, New Zealand uses an endpoint of 326 ppm to access potential effects on sheep and cattle with high ingestion rates and high bioavailability of the fluoride[9]. Based on this analysis, BAH found that a fluoride concentration of 40 ppm in forage, as used In Idaho, would be protective of ecological receptors and grazing animals such as cattle and bison at the Off-Plant OU. The

[9] Cronin, S,J., V. Manoharan, M.J. Hedley, and P. Loganathan. 2000. Fluoride: A review of its fate, bioavailability, and risks of fluorosis in grazed pasture systems in New Zealand. New Zealand J. Agric. Res. 43:295-321.

evaluation is documented in *Ecological Risk-Based Threshold Concentrations for Fluoride*[10] and is also included as Appendix B of *the 2013 Final Technical Memorandum*.

Identification of Potential Monitoring Program, Including Potential Sample Locations

Based on the preliminary analysis indicating some unacceptable risk may be present for individual cattle and bison in some areas of the Off-Plant OU, the EPA requested BAH to develop a draft fluoride monitoring program that would be able to evaluate the effectiveness of changes with regards to protection of ecological receptors and cattle potentially exposed to fluoride in the Off-Plant OU. The analysis and recommendations are included in the 2013 *Final Technical Memorandum*. A summary of the historical and recent monitoring data for fluoride and maps of past fluoride data collection locations are included as Appendices C and D of that report.

BAH first identified potential monitoring locations based on a spatial evaluation of recent and historical data at monitoring stations where the maximum fluoride in forage concentration reported was greater than 40 mg/kg. The data were ranked into categories of High, Medium and Low based on the level of the exceedance and then mapped. Based on the ranking and spatial distribution, a proposed list of 35 monitoring locations distributed within approximately a 3-mile radius of the facility. The draft plan suggested that monthly samples be collected throughout the growing season from the stations currently monitored and two additional locations where spatial gaps were identified. It was further recommended that samples be collected and analyzed consistent with the procedures used for monitoring under their air permit. The EPA's analysis was provided to DEQ for consideration in overseeing the current air permit.

Fluorosis Study Scoped but Not Conducted

During scoping of potential uncertainties in the data and analysis for the Off-Plant OU, the Tribes requested a site-specific fluorosis study to determine the level of fluorosis currently present in the Off-Plant OU, whether fluorosis is expected to occur in the future and, if so, develop site-specific soil and/or vegetation TRVs for fluorosis. As discussed previously, the degree of dental fluorosis in cattle is often used as an early indicator of potential adverse health effects from fluoride exposure. In response, the EPA requested the Companies develop a fluorosis study work plan.

In 2010, the Companies prepared a draft *Fluorosis Study Design* and provided it to the technical team for review in comment.[11] However, citing the EPA's ecological risk assessment guidance, they questioned whether a fluorosis study was appropriate under CERCLA given that the study would address a domesticated animal and fluorosis is not linked to reproduction, mortality or growth of the receptor. Furthermore, they asserted that a study could not be developed that would be reproducible, of a quality required under CERCLA and assist with making risk-based, CERCLA decisions. Following extensive discussions, the EPA decided not to require a fluorosis study.

Supplemental Sampling of the Bottoms Area[12]

The ROD specified that fluoride monitoring should "generally occur within a three-mile radius of the FMC and Simplot Plants" but may also occur at "specific areas outside the three-mile radius, which may contain sensitive species or be of particular ecological or cultural value." Based on the request of the Tribes, during the summer of 2011, the EPA sampled fluoride levels in soil and vegetation in a study unit located in the Bottoms. The Bottoms is a wetland dominated area located two (2) to six (6) miles north of the Site. The area is used by tribal members for hunting, fishing and gathering and is of cultural significance to the Tribes.

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[10] BAH, 2012. *Ecological Risk-Based Threshold Concentrations for Fluoride, Eastern Michaud Flats Superfund Site, Off-Plant Operable Unit.* Prepared for U.S. Environmental Protection Agency Region 10, under RCRA Enforcement, Permitting, and Assistance (REPA) Contract. REPA4 Work Assignment R2101, REPA4-2101-020_rev. April.

[11] Formation Environmental, 2010. *Eastern Michaud Flats Superfund Site, Off-Plant Operable Unit, Fluorosis Study Design.* May 21.

[12] *Final Report of Investigation and Sample Results for the Fluoride Sampling in soil and vegetation in the Bottoms Area of the Fort Hall Reservation near the Eastern Michaud Flats Superfund Site (BAH, 2013).*

The Tribes were invited to participate in all planning and implementation efforts, including selection of the study site, sampling events and discussions concerning QA issues raised during the sampling. All draft work products were shared with the Tribes for their review and comment.

Six (6) composite soil and vegetation samples (plus appropriate quality assurance/quality control samples) were collected from a two-acre exposure unit during four sampling events conducted between June and September 2011. The fluoride concentrations measured in soils ranged from 270 to 890 ug/g dry weight (dw) while concentrations in vegetation ranged from 9.7 to 12 ug/g dw. These levels were found to be consistent with background concentrations and thus, do not appear to be significantly impacted from Site sources.

All samples were collected and analyzed consistent with a Quality Assurance Project Plan (QAPP). Data was validated prior to use. Concerns were raised during the validation of the first-round data. Among other things, it was noted that the fluoride levels reported for soil samples were roughly two orders of magnitude lower than any prior measurements while the levels in vegetation were roughly an order of magnitude greater. Following the initial review of the data, duplicate samples were sent to two other labs for testing using two different analytical methods. The data from these later analyses met QA objectives. The review indicated the concentrations reported in the original sample were likely linked to the analytical method and were not representative of concentrations in the field. Therefore, it was decided that soil samples from the three remaining sampling events would be split and sent to the three labs for analysis using the three different analytical methods.

Following completion of the sampling, all three data sets were evaluated. Inconsistencies in the data generated using the original method were found for all four sampling events. Data from the other two methods, however, passed all QA tests and were consistent both internally and with the other. Both indicated that fluoride levels in the samples collected from the Bottoms Area were at levels consistent with background conditions.

The primary findings of the Bottoms Area investigation are:

- Fluoride levels in soil in the Off-Plant OU are consistent with background levels.
- Fluoride in forage was 9.7 – 12 ug/g dw. The proposed screening level in the Off-Plant monitoring report and the limit in DEQ's air permit is 40 ug/g dw.
- There were some problems experienced with the initial method used to analyze forage samples which resulted in unexpectedly high reported concentrations. While the exact reason for these "false positive" results is not known, it may be that concentrations were very close to the detection level. Regardless of the cause, all samples from round 1 were reanalyzed by a second method. The second method was confirmed by a third method during the final round of sampling and found to be consistent with that. Thus, results from second method are assumed correct and the high levels of fluoride in the one round of samples has been determined to be in error.

Throughout the study, the EPA shared data and solicited input from the Tribes, DEQ and Simplot. It should be noted that the Tribes expressed considerable concern about data quality. Their technical staff never agreed with the EPA's finding that fluoride levels in vegetation in the Bottoms Area were at levels consistent with background or with the EPA's view that the data indicated that the Bottoms were not significantly impacted from Site sources (e.g. emissions from the Don Plant.

Monitoring Fluoride in Springs

To ensure that all media were considered in the fluoride monitoring program, fluoride levels at three springs downgradient of the Don Plant have been regularly monitored as part of the Groundwater and Surface Water Monitoring Plan for the Simplot OU.[13] Fluoride levels in the water samples are analyzed and reported in the

[13] Formation Environmental, 2016. Groundwater and Surface Water Monitoring Plan, Revision 1, Simplot Operable Unit, Eastern Michaud Flats Superfund Site, Pocatello, Idaho. November.

quarterly and annual monitoring reports submitted to the EPA. Recent data indicate that fluoride concentrations are below the MCL. Thus, no CERCLA action is required.

Reassessment of Potential Human Health Risks from Exposure to Fluoride

The 1995 human health risk assessment indicated fluoride did not present human health risks above the EPA's thresholds. The EPA requested the Companies use the 2009 fluoride data to reevaluate potential human health risks from fluoride. On April 25, 2011 the Companies submitted a *Comprehensive Letter Report Documenting Potential Human Health Risks for Site COCs in the Off-Plant OU*.[14] The analysis indicated that the levels of fluoride present in the Off-Plant OU would not result in any exceedances of residential or worker screening human health risk-based comparative values (CVs) at any of the decision units and, thus, no further quantification or investigation of human health risks from fluoride was needed. Following review by the technical team, the EPA concurred with the Companies' findings.

Summary of Findings

In summary, the additional sampling and evaluation activities found:

- Fluoride levels present in soils and vegetation, as well as human health and ecological risks associated with fluoride, have been well characterized.
- The primary source of fluoride present in Off-Plant soils and vegetation are air emissions from ongoing operations at the Simplot Don Plant. The emissions are currently regulated under a DEQ air permit.
- No seasonal, annual or long-term patterns were identified in the fluoride data.
- All significant potential risks to ecological receptors were evaluated in the ecological risk reassessment.
- The fluoride levels in some vegetation adjacent to the Don Plant have the potential to impact ecological receptors at the individual level. However, widespread or significant ecological impacts at the community or population level are not expected.
- Fluoride in forage grown in some portions of the Off-Plant OU have exceeded the fluoride end points contained in Idaho's forage standards. The source is permitted by the State of Idaho.
- Fluoride levels in forage and soils collected from the Bottoms Area are consistent with background conditions.
- Fluoride levels in springs downgradient of the Site do not exceed the MCL of 4 ug/L.
- Fluoride levels do not present human health risks above CERCLA risk thresholds.

[14] Hanna Associates, Inc. 2011. *Comprehensive Letter Report Documenting Potential Human Health Risks for Site COCs in the Off-Plant OU; Eastern Michaud Flats (EMF) Superfund Site, Pocatello, Idaho. April 25.*

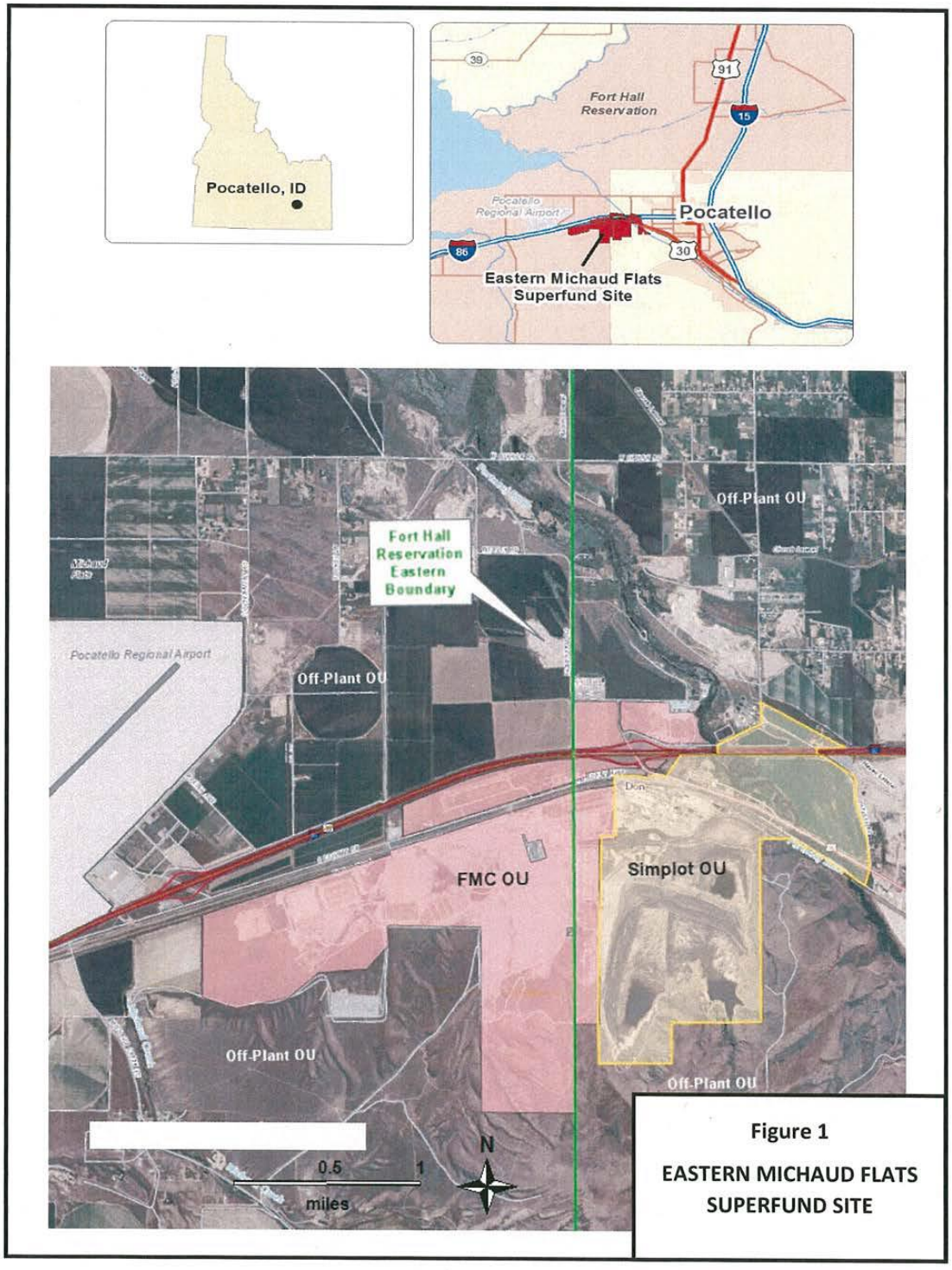

Figure 1

EASTERN MICHAUD FLATS SUPERFUND SITE

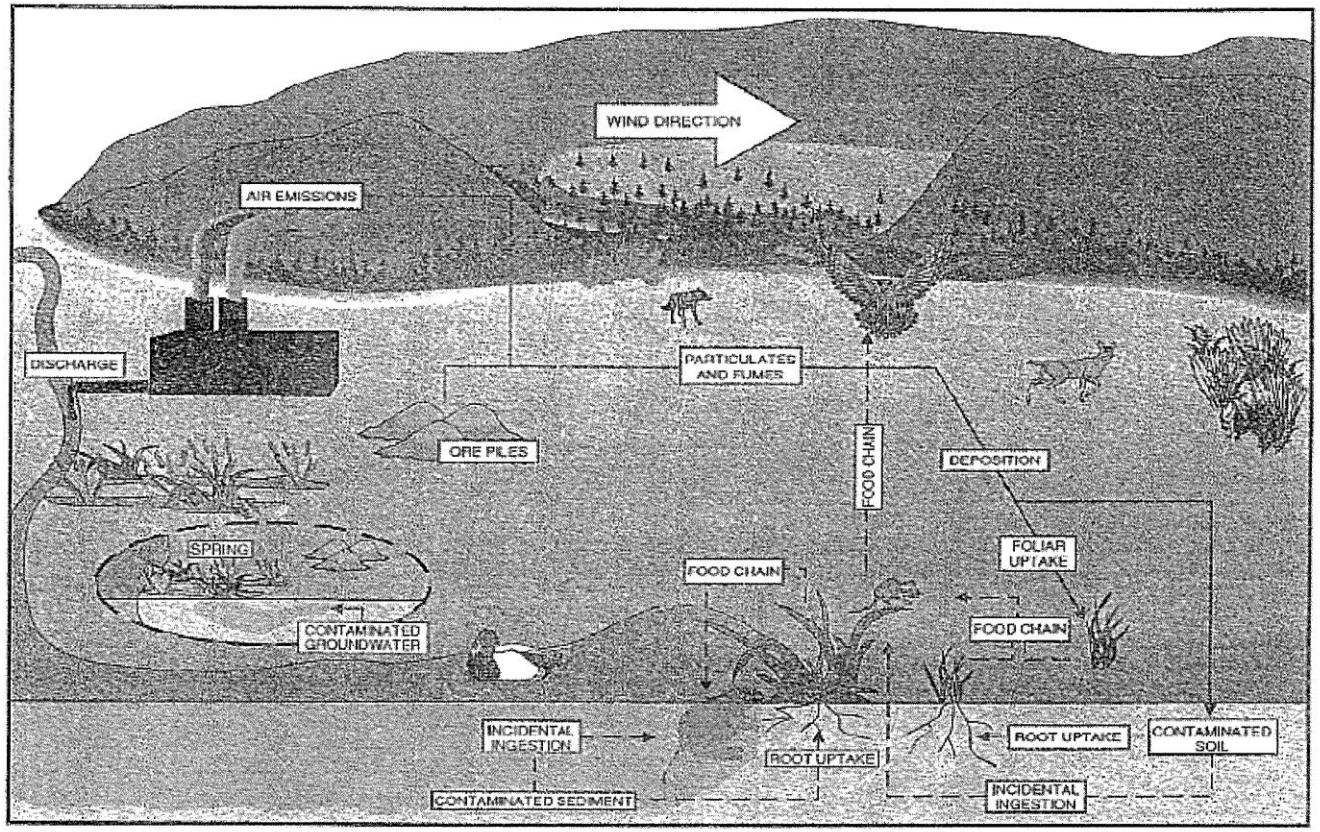

Figure 2

CONCEPTUAL SITE MODEL FOR POTENTIAL ECOLOGICAL EXPOSURE, OFF-PLANT OU, EMF

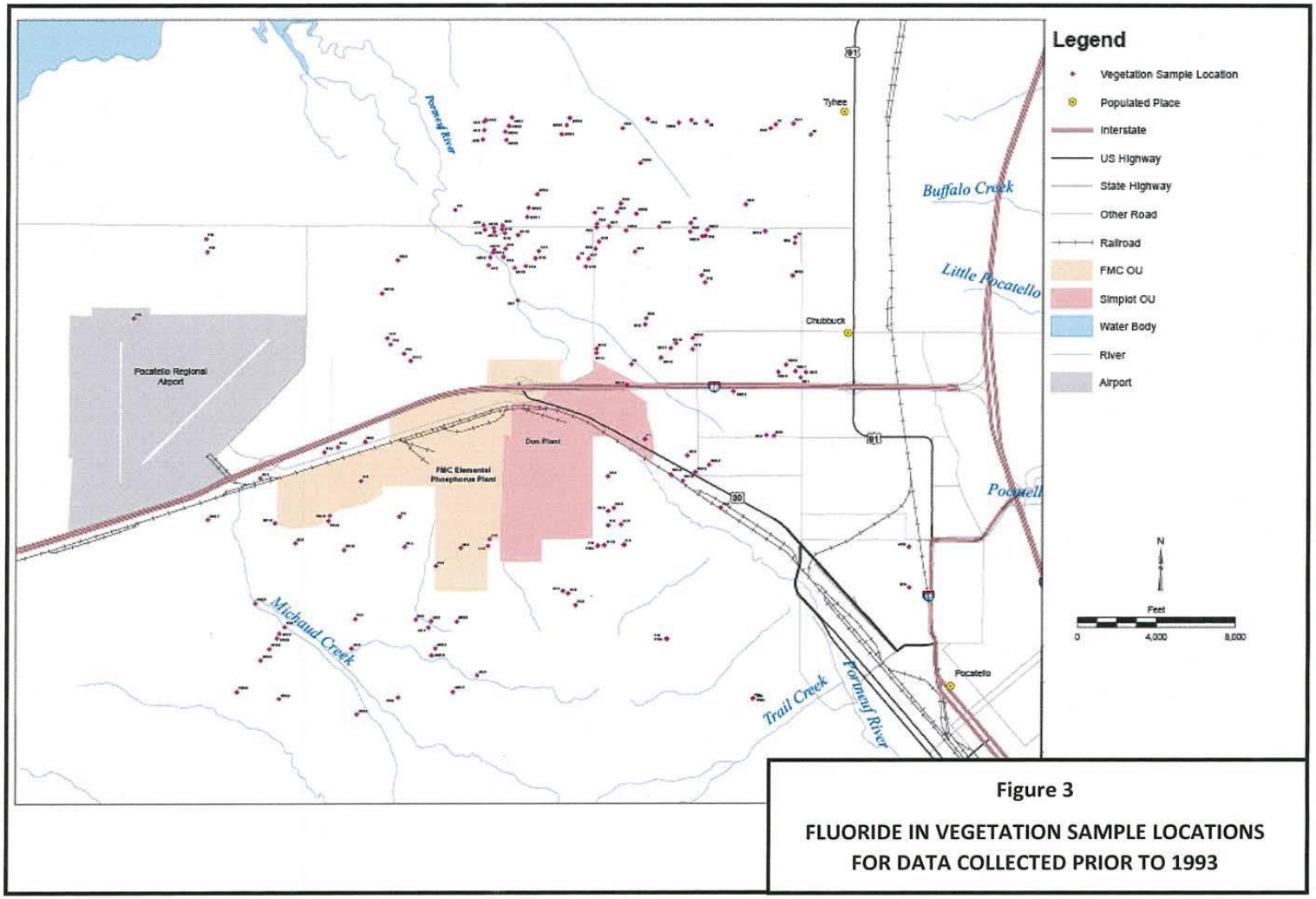

Figure 3

FLUORIDE IN VEGETATION SAMPLE LOCATIONS FOR DATA COLLECTED PRIOR TO 1993

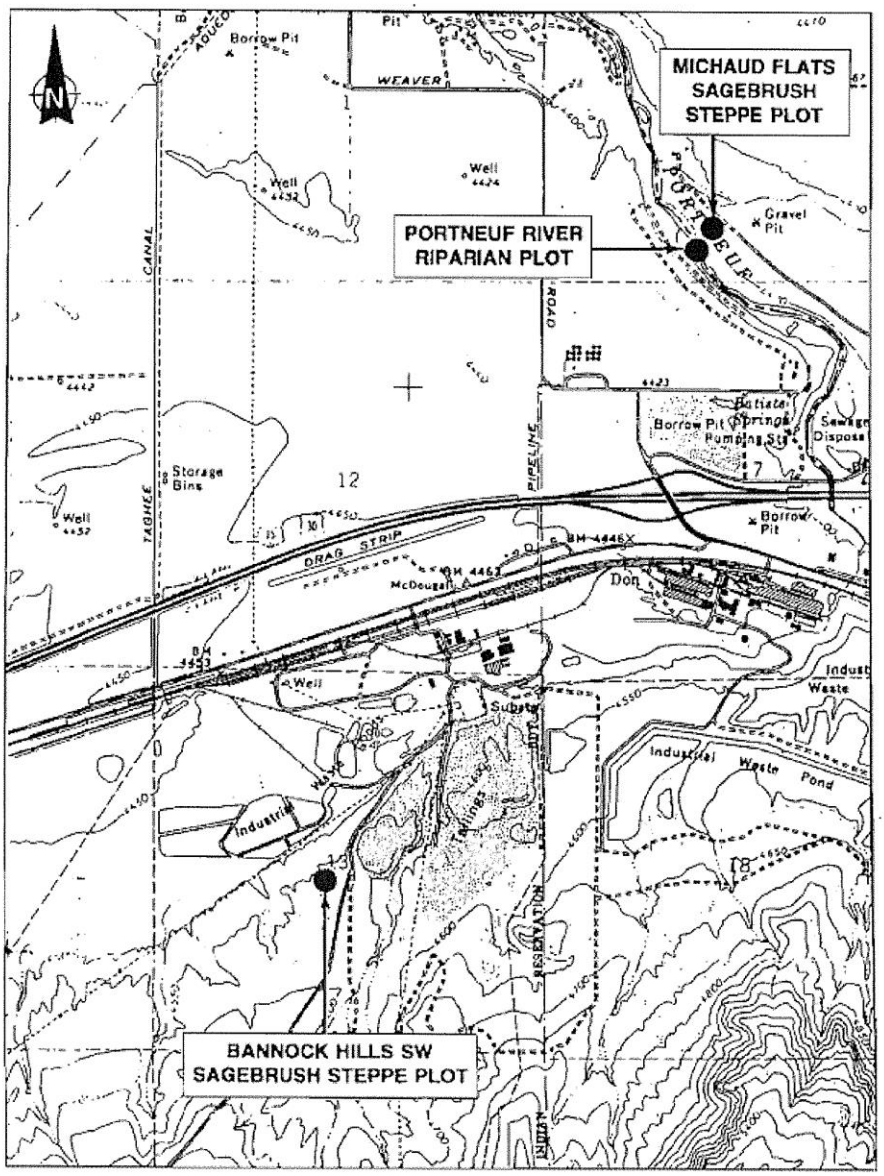

Figure 4

SAMPLING SITES, 1994 ECOLOGICAL RISK ASSESSMENT, OFF-PLANT OU, EMF

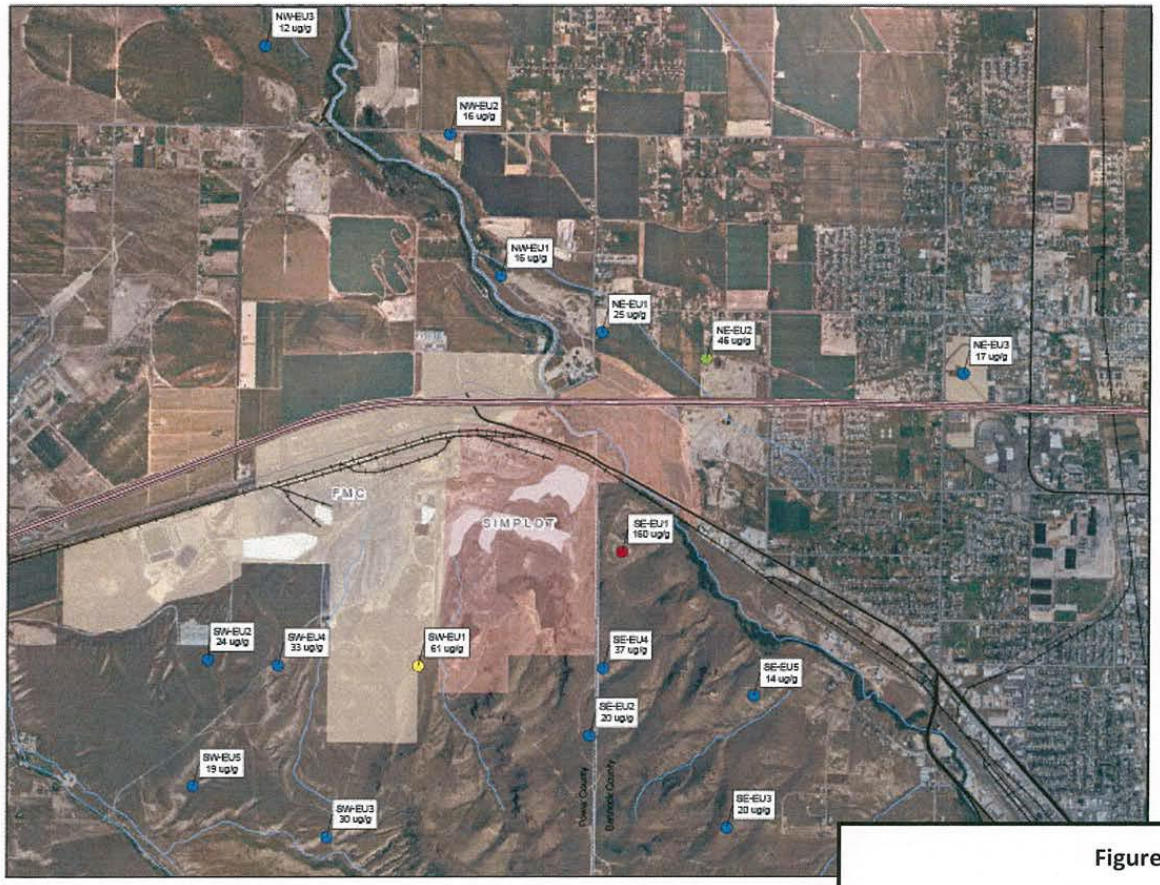

Figure 5

FLUORIDE IN FORAGE SAMPLING LOCATIONS, 1998 ECOLOGICAL RISK REASSESSMENT

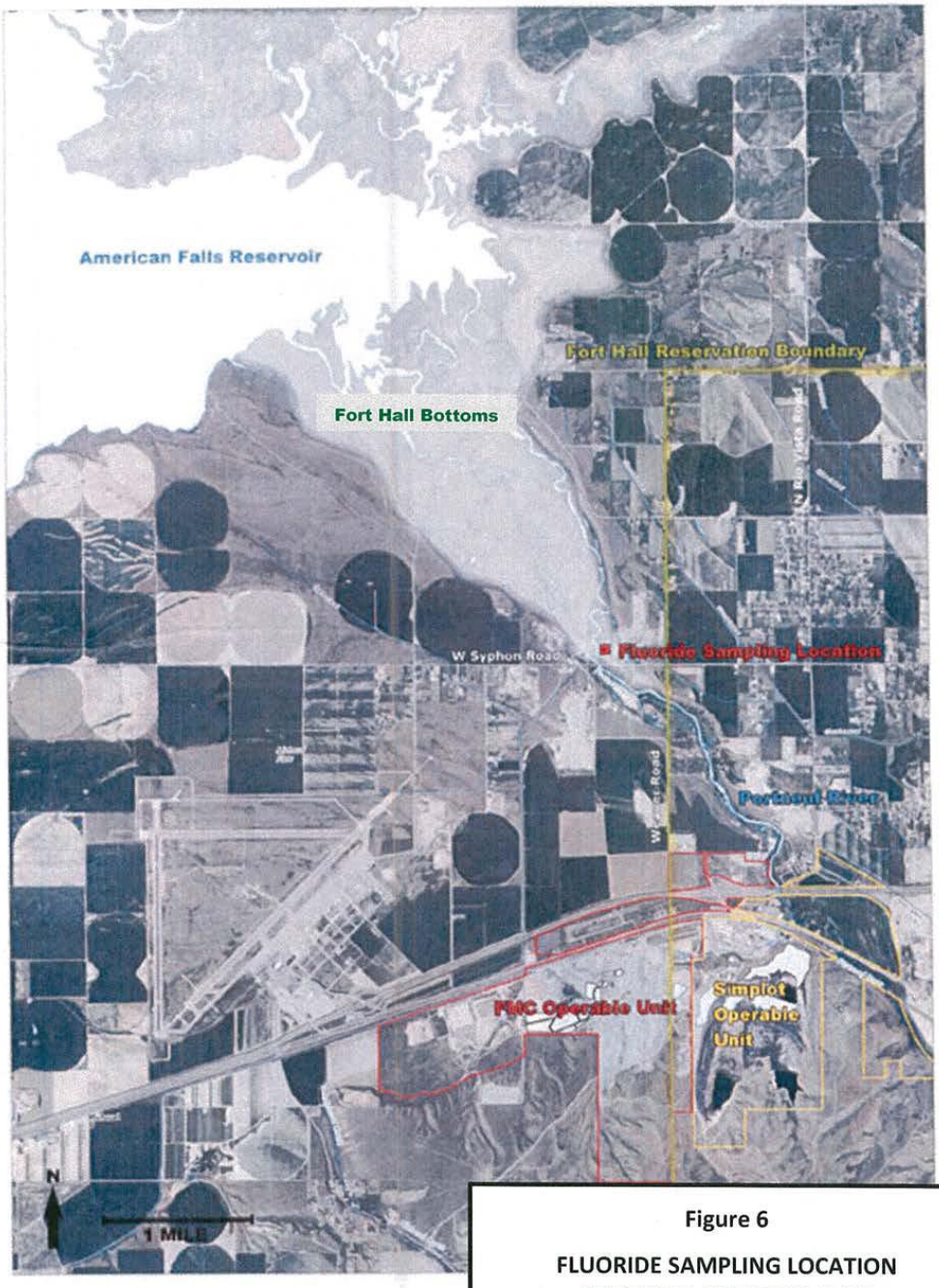

Figure 6

FLUORIDE SAMPLING LOCATION
FORT HALL BOTTOMS AREA

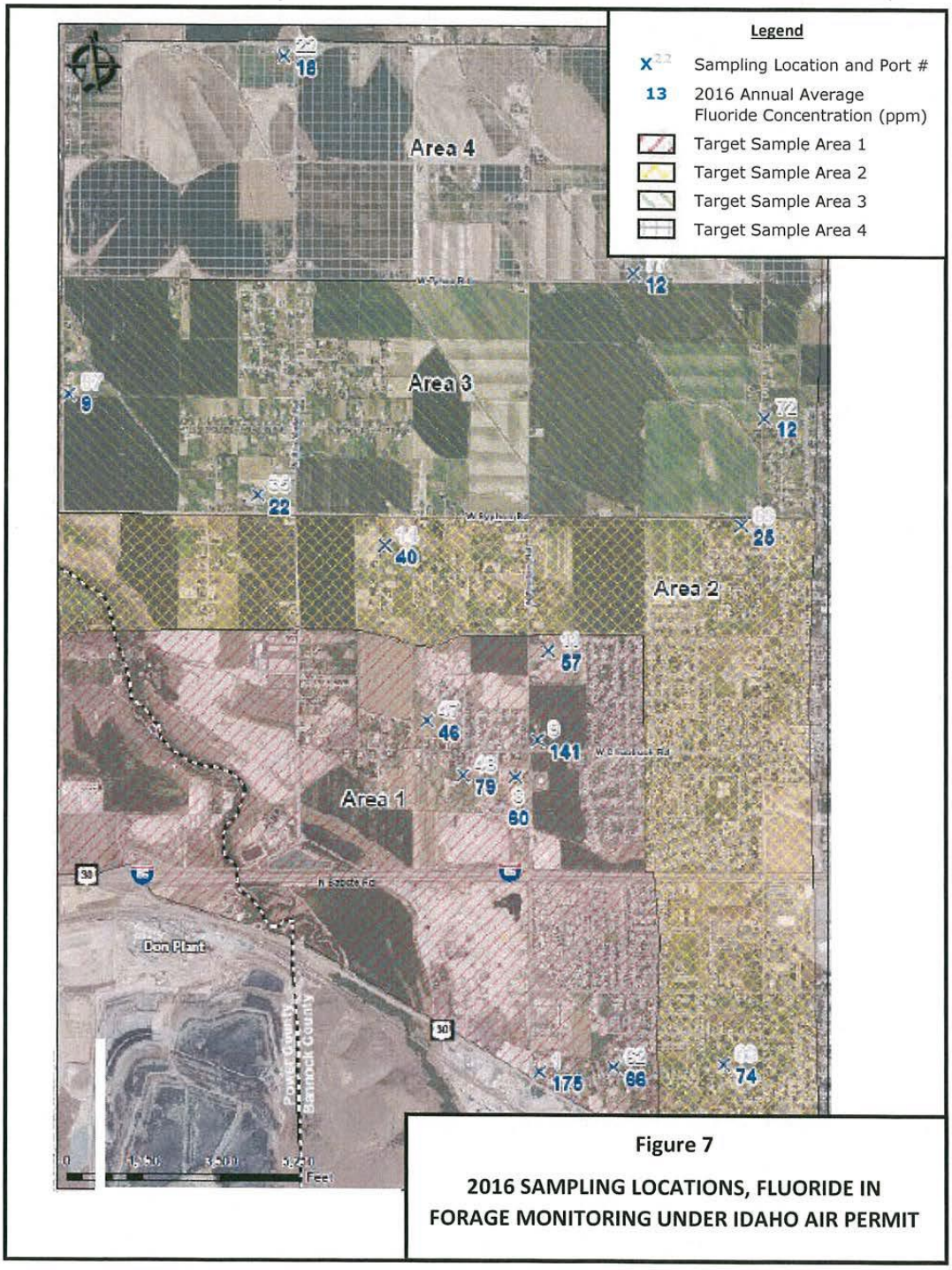

Figure 7

2016 SAMPLING LOCATIONS, FLUORIDE IN FORAGE MONITORING UNDER IDAHO AIR PERMIT